DETAILED ACTION

The response filed 7/7/08 to the Office action has been entered. Claims 21-34, and 42-43 are pending.

1. Applicant's arguments with respect to claims 21-34, and 42-43 have been considered but are moot in view of the new ground(s) of rejection as set forth bellow.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 21-34 and 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt et al. (WO 99/02728, issued January 21, 1999) in view of Shultz et al. (6,268,146, issued Jul. 31, 2001).

Schmidt et al. disclose that in one arrangement, a series of DNA fragments is provided by contacting a template in the presence of DNA polymerase with a mixture of nucleotides

sufficient for hybridizing to the template for forming a second strand of DNA complementary to the template. The mixture comprises a set of four probes containing all four nucleotides for hybridizing to the template in which the nucleotides of each probe comprise a modified nucleotide, which is capable of polymerizing to the second strand of DNA, but blocked to prevent further polymerization and which is cleavably attached to the mass label. The mass label is identified by mass spectrometry of the modified nucleotide (see pg. 3, paragraph 5 and pg. 4, paragraph 1). The mass label corresponds to a modified nucleotide so that the nucleotide present in the target template may be deduced (See pg. Paragraph 4). The cleavage is done by photolysis or chemical cleavage (see pg. 12, paragraph 2, pg. 13, paragraph 2, pg. 46, paragraph 4). Ligating is also used to produce extended products (see pg. 12, paragraph 1 and3). The cleavable tag is a 3' cleavable tag (see pg. 46, paragraph 5, fig. 4a and fig. 13) in which the cleavable tag is attached to the 3' end.

Schmidt et al. do not explicitly disclose the cleavable tag is an acid or base cleavable tag as recited in claims 29 and 30. However, Schmidt et al. disclose that the cleavage is done by photolysis or chemical cleavage (see pg. 12, paragraph 2, pg. 13, paragraph 2, pg. 46, paragraph 4). This teaching is inherent that the cleavable tag is an acid or base cleavable tag.

Schmidt et al. do not disclose step c) of claim 21, step c) of claims 42-43.

Shultz et al. disclose a method which is used to determine the presence or absence of a predetermined (known) nucleic acid target sequence in a nucleic acid sample (see column 5, lines 44-46). The sample is admixed with a depolymerizing amount of an enzyme whose activity is to release one or more nucleotides from the 3'-terminus of a hybridized nucleic acid probe (see column 5, lines 63-67). The released nucleotides are identifier nucleotides located in a 3'-

terminal region (See column 5, lines 61-63). The identifier nucleotides are fluorescently labeled (see column 6, lines 12-15). The presence of released nucleotide is analyzed via mass spectrometry (see column 16, lines 51-52).

One of ordinary skill in the art would have been motivated to apply a depolymerizing enzyme to release fluorescently labeled identifier nucleotides as taught by Shultz et al. (See column 12, lines 15-24) because by doing so nucleic acid hybrid can be detected with very high levels of sensitivity without the need for radiochemicals or electrophoresis (see column 7, lines 7-10). It would have been prima facie obvious to apply a depolymerizing enzyme to release a cleaved tag which is not bound to at least one complementary nucleotide.

Summary

4. No claims are allowed.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joyce Tung whose telephone number is (571) 272-0790. The examiner can normally be reached on Monday - Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on 571 272-0782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kenneth R Horlick/
Primary Examiner, Art Unit 1637

Joyce Tung
October 17, 2008